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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,390	10/21/2003	Mark Duron	40129/01101	2375

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EXAMINER

JOSEPH, JAISON

ART UNIT PAPER NUMBER

2611

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,390

Applicant(s)

DURON ET AL.

Examiner

Jaison Joseph

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 07/28/2006 toward rejection of claims 10 – 17 have been fully considered but they are not persuasive.

Regarding claims 10 –17, Applicant argues “the Levy patent ... reflected signal”. Examiner respectfully disagrees. Canceling the echo in a received reflected signal is the intended use of the invention. Levy teaches canceling the echo in a received signal using a feedback. Levy et al further teach demodulating a reflection (received) signal into in-phase and quadrature signal (see figure 3, element 36), filtering the in-phase signal to isolate an in-phase error signal, filtering the quadrature signal to isolate the quadrature error signal (see figure 3, element 31), modulating the in-phase error signal and quadrature error signal to create a feedback signal (see figure 3, element 32), and combining the reflection signal and the feed back signal to cancel at least a portion of echo signals in the reflection signals (see element 34). Thus Levy teaches cited limitations. Applicant is reminded that the examiner is entitled to give broadest reasonable interpretation to the language of the claims.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 10 - 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Levy et al (US Patent 4,335,214).

Regarding claim 10, Levy et al teach a method comprising the step of demodulating a reflection signal into in-phase and quadrature signal (see figure 3, element 36), filtering the in-phase signal to isolate an in-phase error signal, filtering the quadrature signal to isolate the quadrature error signal (see figure 3, element 31), modulating the in-phase error signal and quadrature error signal to create a feedback signal (see figure 3, element 32), and combining the reflection signal and the feed back signal to cancel at least a portion of echo signals in the reflection signals (see element 34).

Regarding claim 11, which inherits the limitations of claim 10, Levy et al further teach the filtering steps include one of low pass filtering, bandpass filtering, and high pass filtering.

Regarding claim 12, which inherits the limitations of claim 10, Levy et al further teach amplifying the feedback signal prior to the combining step (the time domain complex transversal filter has the weight taps which controls the amplitude of the signal).

Regarding claim 13, which inherits the limitations of claim 10, Levy et al further teach converting the in-phase signal and the quadrature signal from an analog signal to digital signal (see figure 3, element 35), and converting the in-phase error signal and the quadrature error signal from the digital signal to analog signal (see figure 3, element 33).

Regarding claim 14, the claimed method including the features corresponding to subject matter mentioned in the rejection of claim 10 is applicable hereto.

Regarding claim 15, which inherits the limitations of claim 14, the claimed method including the features corresponding to subject matter mentioned in the rejection of claim 11 is applicable hereto.

Regarding claim 16, which inherits the limitations of claim 14, Levy et al further teach the combiner element is one of a splitter and a directional coupler (see figure 3, element 34, 43,45).

Regarding claim 17, which inherits the limitations of claim 14, the claimed method including the features corresponding to subject matter mentioned in the rejection of claim 12 is applicable hereto.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helms et al (US Patent 6,236,315) in view of Levy et al (US Patent 4,335,214).

Regarding claim 1, Helms et al teach a system comprising a transmitter element creating an interrogation signal and transmitting the interrogation signal (see figure 2, element 201, 202, 203, and 204) and a receiver element receiving a reflection signal of

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the interrogation signal and canceling the echo signal in the reflection signal. Helms et al is silent on combining the reflection signal and a feedback signal to cancel at least a portion of radio frequency signals in the reflection. However in analogous art Levy et al teach canceling echo signal in a received signal by combining the reflection signal and a feedback signal to cancel at least a portion of radio frequency signals in the reflection (see figure 3, component 30, Levy et al teach canceling the echo in a received (reflected) signal (output signal of element 45) by combining the received signal and feedback signal (the output of element 33)). Therefore it would be obvious to an ordinary skilled in the art at the time the invention was made to use Levy's echo canceller in Helms system. The suggestion or motivation to do so is no synchronization between the transmitter and receiver of the terminal in which it is incorporated and which lends itself to less complex digital implementation (see column 3, lines 10 –15).

Regarding claim 2, which inherits the limitations of claim 1, Levy et al further teach feedback signal is derived by isolating an error component of the reflection signal (see figure 3 element 30).

Regarding claim 3, which inherits the limitations of claim 2, Levy et al further teach the error component of the reflection signal is isolated in one of an in phase signal and a quadrature signal (see inputs to element 32).

Regarding claim 4, which inherits the limitations of claim 2, Levy et al further teach wherein the error component of the reflection signal is isolated by filtering the reflection signal (see element 31).

Regarding claim 5, which inherits the limitations of claim 4, Levy et al further teach the feedback signal is combined with the reflection signal within an impulse response time of a filtering element which is filtering the reflection signal.

Regarding claim 6, which inherits the limitations of claim 1, Helms et al further teach wherein the reflection signal is reflected by a radio frequency tag (see abstract).

Regarding claim 7, which inherits the limitations of claim 1, Helms et al further teach wherein the feedback signal is derived through one of analog processing and digital processing (see column 1, lines 33 – 65).

Regarding claim 8, the claimed method including the features corresponding to subject matter mentioned in the rejection of claim 2 is applicable hereto.

Regarding claim 9, which inherits the limitations of claim 8, the claimed method including the features corresponding to subject matter mentioned in the rejection of claim 3 is applicable hereto.

5. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levy et al (US Patent 4,335,214).

Regarding claim 19, which inherits the limitations of claim 14, Levy et al are cited as explained in the above paragraph. Levy et al is silent on having a third filter to filter the feedback signal before input into the combiner element. However, at the time the invention was made, it would be obvious to an ordinary skilled in the art at the time the invention was made to use a filter to reduce the noise in the feedback path.

Allowable Subject Matter

6. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison Joseph whose telephone number is (571) 272-6041. The examiner can normally be reached on M-F 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jaison Joseph
10/26/2006



DACHA
PRIMARY EXAMINER